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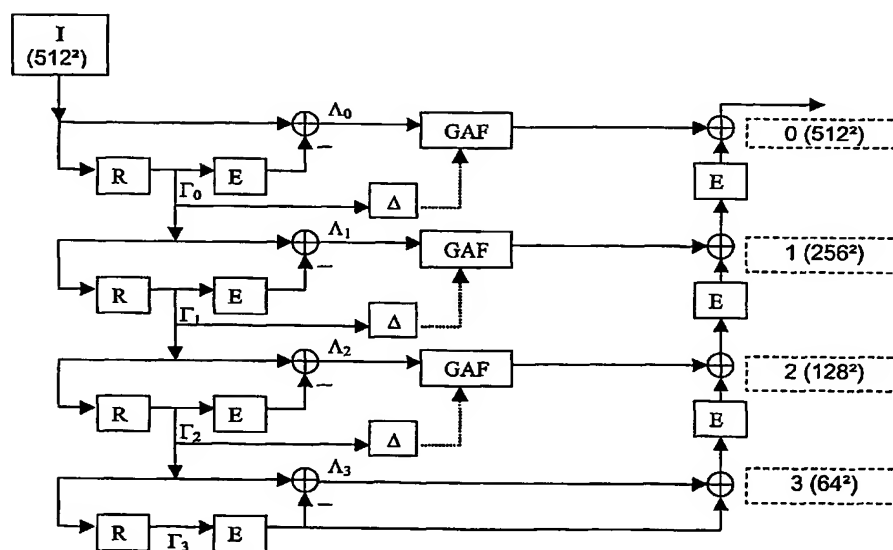
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PROPERTY & STANDARDS GMBH** [DE/DE]; Stein-  
damm 94, 20099 Hamburg (DE).(71) Applicant (for all designated States except DE, US):  
**KONINKLIJKE PHILIPS ELECTRONICS N.V.**  
[NL/NL]; Groenewoudseweg 1, NL-5621 BA Eindhoven  
(NL).

(72) Inventors; and

(75) Inventors/Applicants (for US only): **ECK, Kai** [DE/DE];c/o Philips Intellectual Property & Standards GmbH, Weis-  
shausr. 2, 52066 Aachen (DE). **FILLBRANDT, Hol-  
ger** [DE/DE]; c/o Philips Intellectual Property & Standards  
GmbH, Weissshausr. 2, 52066 Aachen (DE).(74) Agent: **VOLMER, Georg**; Philips Intellectual Property &  
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(54) Title: METHOD OF PROCESSING AN INPUT IMAGE BY MEANS OF MULTI-RESOLUTION

(57) **Abstract:** The invention relates to a method of multi-resolution with gradient-adaptive filtering (MRGAF) of X-ray images in real time. For an image strip of 2K adjacent rows, a resolution into a Laplacian pyramid ( $L_0, \dots, L_3$ ) and a Gaussian pyramid ( $G_0, \dots, G_3$ ) is carried out up to the K-th stage. By limiting a processing operation to such a strip, it is possible to keep all relevant data ready in a local memory with rapid access (cache). A further acceleration compared to the conventional algorithm is achieved by calculating the gradient ( $D$ ) from the Gaussian pyramid representations. By virtue of these and other optimization measures, it is possible to increase a multi-resolution with gradient-adaptive filtering to a processing rate of more than thirty (768 @ 564) images per second.

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